

Cumulative Impacts Analysis

Cumulative Impacts are defined by the CEQ in 40 CFR 1508.7 as “impacts on the environment which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” Cumulative impacts can result from individually minor but collectively significant actions taking place over time. The analysis area for the cumulative impact analysis is the same as the analysis area for each resource found in Section 3.

4.1 Past and Present Actions

Current land use activities in the vicinity include geothermal energy production, military operations, dispersed casual recreation, hunting units 182 and 183 (mule deer, desert bighorn sheep in particular), and livestock grazing. In the past, mining claims were active in the vicinity, but no mining activities are currently known. A BLM ROW planning corridor exists within Dixie Valley with the express purpose of providing an outlet for geothermal power to be produced in the valley (BLM, 2008c). Currently, there is a transmission line within this corridor, and the 62-MW Dixie Valley Power Plant has been producing energy here for more than 20 years (see Figure 3-1). Multiple geothermal leases are currently authorized, and geothermal exploration is permitted in Dixie Meadows.

4.2 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions (RFFAs) constitute those actions that are known or could reasonably be anticipated to occur within the analysis area for each resource, within a time frame appropriate to the expected impacts from the Proposed Action. For the Proposed Action, the time frame for potential future actions is reasonably assumed to be the duration of the lease, or approximately 35 years. RFFAs include grazing; dispersed recreation, including off-highway vehicle use and hunting; continued geothermal energy production from the Dixie Valley Power Plant; and geothermal development in Dixie Meadows. There are also multiple geothermal leases authorized within the scope of this analysis that may lead to exploration and development. There are plans by Churchill County to obtain water from the Dixie Valley groundwater basin.

4.3 Cumulative Impacts

4.3.1 Water Resources (Surface/Ground)

The well testing phase would have temporary, localized effect on surface and groundwater. No other direct or indirect impacts are anticipated except for limited use of alluvial groundwater to replace geothermal water lost to evaporation. Therefore, project operations would have only temporary contributions to any cumulative impacts on water resources

and water quality, and only a limited effect on resources associated with shallow groundwater use.

4.3.2 Wildlife (*including Migratory Birds and BLM-designated Sensitive Species*)

Wildlife may be affected negatively by displacement or disruption of normal behavioral patterns due to any of the RFFAs, but particularly construction, project operations and maintenance, and site rehabilitation from geothermal exploration and/or development. In addition, some of these projects and actions could increase traffic, conflicts with humans, and competition for habitat niches. Some of these actions may also decrease forage quality, quantity, and composition due to groundwater depletion.

Based on the analysis in Chapter 3, the minimal extent of noise effects from the power plant, the low decibels emanating from the pipeline pumps, and the small habitat acreage loss relative to the hundreds of thousands of acres of available cold desert scrub habitat in Dixie Valley, the Proposed Action would only have a negligible contribution to wildlife impacts within the area of analysis when combined with past and present actions and RFFAs.

4.3.3 No Action Alternative

Under the No Action Alternative, the project site would not be developed at this time and would be available for development in the future. There would be no impacts from the Proposed Action to any of the identified resources or activities from implementation of the No Action Alternative.

All resource values have been evaluated for cumulative impacts. It has been determined that cumulative impacts would be negligible as a result of the proposed action or alternative.

4.4 Monitoring

Monitoring described in the Proposed Action is sufficient for this action.